FAG

FAG Motion Guard CONCEPT6 CONTROL

Automatic single-point and multiple-point lubrication system
User manual

SCHAEFFLER

LuK INA FAG

Safety guidelines and symbols

High product safety

Our products correspond to the current level of research and technology. If the bearing arrangement is designed correctly, the products are handled and fitted correctly and as agreed and if they are maintained as instructed, they do not give rise to any direct hazards.

Definition of guidelines and symbols

The warning and hazard symbols are defined along the lines of ANSI Z535.6–2006.

The meaning of the guidelines and symbols is as follows:

Warning

In case of non-compliance, death or serious injury may occur.

Caution

In case of non-compliance, minor or slight injury will occur.

In case of non-compliance, damage or malfunctions in the product or the adjacent construction will occur.

Note!

There follows additional or more detailed information that must be observed.

①

Numbers within a circle are item numbers.

Original user manual

This user manual is the original user manual in accordance with the Machinery Directive 2006/42/EC.

FAG Motion Guard CONCEPT6 CONTROL

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Features

The lubricator FAG Motion Guard CONCEPT6 CONTROL supplies lubricant to one lubrication point. The maximum pressure is 25 bar. The lubricant is provided by a replaceable lubricant cartridge (LC unit).

This user manual must always be complete and in a legible condition. Any persons using the distributor must have this user manual available and must observe the information in the manual.

Scope of delivery

The scope of delivery is shown in *Figure 1*.

① Drive unit
② User manual

Figure 1
Scope of delivery

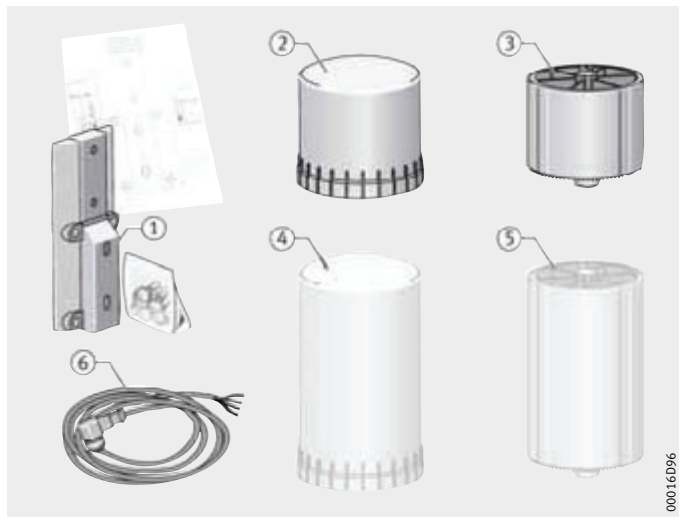
Note

Check the delivery and report any damage in transit as a complaint to the carrier. Any defects must be reported promptly to Schaeffler Technologies AG & Co. KG.

Schaeffler Technologies AG & Co. KG accepts no liability for any defects that are the subject of retrospective complaints.

Accessories, necessary

Accessories to be ordered separately, *Figure 2*.



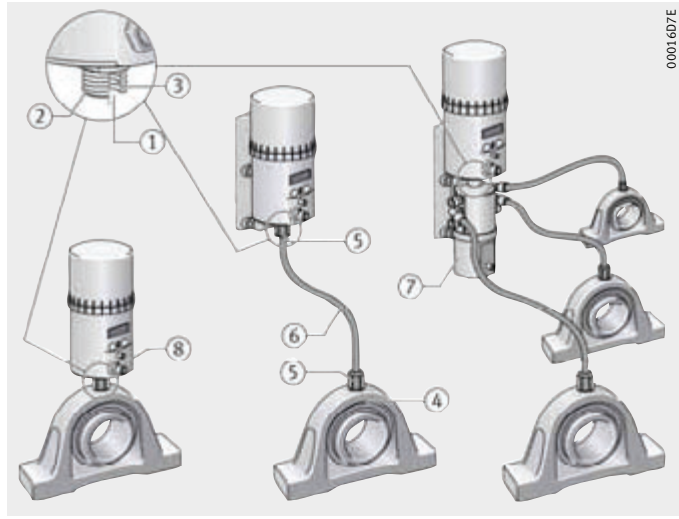
① Holder, drilling template, screws
② Cover for LC250
③ LC250, 250 cm^3
④ Cover for LC500
⑤ LC500, 500 cm^3
⑥ Connection cable with plug, 5 m or 10 m

Figure 2
Accessories

Connectors

The grease outlet of the lubricator has an external and internal thread and can thus be screwed directly to the lubrication point or into the distributor. Information on the distributor: see BA 12, FAG Motion Guard C6-MP-DISTRIBUTOR. Connection via connectors and lubricant feed lines is also possible, *Figure 3*.

The lubricator is connected to the controller of the machine using the socket and connection cable.



① Grease outlet
② External thread
③ Internal thread
④ Lubrication point
⑤ Connector
⑥ Lubricant feed line
⑦ Distributor
⑧ Socket

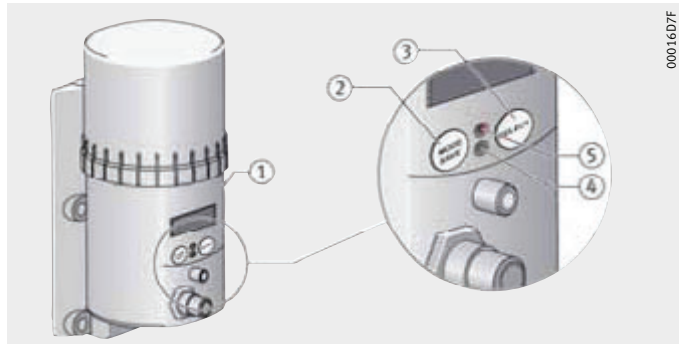
Figure 3
Connectors

Operation

The operating period and lubricant quantity are set on the lubricator using two keys, *Figure 4*.

The lubricator can, however, be operated completely under machine control (pulse operation).

The settings are visible on the LC display. Whether the lubricator is operating correctly or not is indicated by a green or red LED.



① LC display
② Key MODE SAVE
③ Key SELECT
④ Green LED
⑤ Red LED

Figure 4
Displays, operation

Ambient conditions

If the cover has been fitted correctly, the lubricator is resistant to dust and spray water. The sealing rings and plastics may be attacked by ambient media. Uniform dispensing of lubricant and pressure build-up to a maximum of 25 bar can only be ensured at operating temperature.

Protect the distributor against chemically aggressive environments.

Operating temperature

Lubricators can be used in the temperature range from –20 °C to +60 °C.

Storage

Store the lubricator in dry, dust-free conditions, protected against sunlight and in the temperature range from +15 °C to +25 °C.

Storage life of drive unit

The storage life of the drive unit is restricted by the life of the back-up battery. The back-up battery will be discharged through running down after approx. 10 years and must then be replaced by the manufacturer. The internal back-up battery will run down even more quickly if the stopper and cover disk are removed from the drive unit, *Figure 5*.

Leave the stopper and cover disk on the drive unit during storage and only remove immediately before mounting.

① Stopper
② Cover disk
③ Drive unit

Figure 5
Drive unit

Storage life of LC unit

The maximum storage life of an LC unit is 2 years, the controlling factor is the lubricant fill date.

Legal guidelines

The information in this manual corresponded to the most recent status at the close of editing. The illustrations and descriptions cannot be used as grounds for any claims relating to lubricators that have already been delivered.

Schaeffler Technologies AG & Co. KG accepts no liability for any damage or malfunctions if the lubricator or LC unit has been modified or used in an inappropriate manner.

Design and safety guidelines

Intended purpose

The lubricator greases one lubrication point and gives feedback to the machine controller on whether it is operating without malfunctions. Typical areas of application include the lubrication points on rolling and plain bearings, drive and conveyor chains, guidance systems, open gearboxes and seals.

Responsible persons

The operator and safety co-ordinator are defined as responsible persons. The operator is the natural or juristic person that uses the lubricator or on whose instruction the lubricator is used.

Qualified personnel

The lubricator must only be used by qualified personnel.

A person defined as qualified personnel:

- is authorised to use the lubricator by the safety co-ordinator
- has all the necessary knowledge
- is familiar with the safety guidelines
- has read and understood this manual.

Protective equipment

Protective equipment is intended to protect personnel against health risks.

Caution

Always wear safety goggles when working with the lubricator.

Failure

Connect the lubricator to the controller using the connection cable. Pay attention to any malfunction of the lubricator and take appropriate measures to prevent possible damage to property.

Caution

Do not modify the lubricator. Keep grease away from eyes, skin and clothing. Observe the safety data sheets for the greases.

Warning

When working on machinery and plant, observe the safety guidelines and user manuals of the manufacturer.

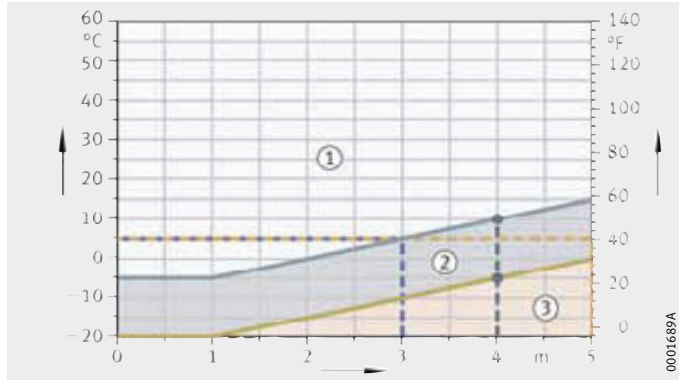
Mounting

If the lubricator is not mounted directly on the lubrication point, the maximum length of the lubricant feed line must be calculated and then the mounting location selected accordingly.

Long lubricant feed line

The maximum length of the lubricant feed line is dependent on:

- the grease used
- the ambient temperature.



① Operating range, standard grease
② Operating range, low-temperature grease
③ Impermissible, outside specification

Figure 6
Operating temperature, length of lubricant feed line

Examples

Determining the maximum length of the lubricant feed line, *Figure 6*:

- The operating temperature is +5 °C.
  - Working from +5 °C to the right gives a maximum length of 3 m for standard grease and a maximum length of 5 m for low-temperature grease.

Calculating the operating temperature:

- The length of the lubricant feed line is 4 m.
  - Working from 4 m upwards gives a minimum operating temperature of +10 °C for standard grease and a minimum operating temperature of –5 °C for low-temperature grease.

Operating temperature of grease

With a lubricant feed line length of 5 m, the following greases can be used:

- Standard grease: +15 °C to +60 °C
- Low-temperature grease: 0 °C to +15 °C.

Schaeffler Technologies AG & Co. KG accepts no liability for applications which fall outside the specifications, *Figure 6*.

If the application does fall outside the specifications, it is absolutely vital that Schaeffler Customer Service is contacted before initial operation.

Material required

The following material is required for mounting:

- connectors
- lubricant feed line
- connection cable
- holder
- grease cartridge (400 g) for pregreasing of the lubricant feed line
- drive unit
- LC unit
- cover.

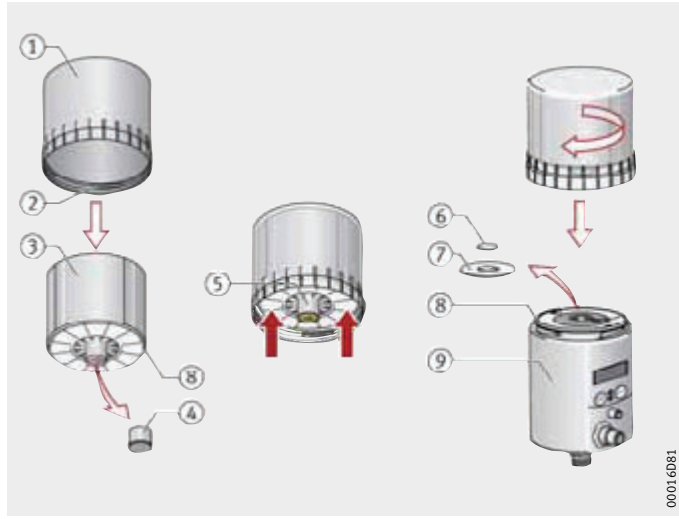
Order accessories as necessary, see table, page 24.

Do not use LC units and lubricant feed lines other than those from Schaeffler Technologies AG & Co. KG. Always use a new LC unit.

Assembly

Assemble the lubricator as follows:

- Insert the LC unit into the cover and remove the sealing cap, *Figure 7*.
- Press the LC unit into the cover until lubricant emerges from the outlet.
- Loosen the stopper and remove the cover disk.
- Position the LC unit and cover on the drive so that the catches lock into place and the teeth engage with each other. Rotate the cover in a clockwise direction until the bayonet catch locks into place.



① Cover
② Catch, 4 pieces
③ LC unit
④ Sealing cap
⑤ Outlet
⑥ Stopper
⑦ Cover disk
⑧ Teeth
⑨ Drive unit

Figure 7
Assembly

Location

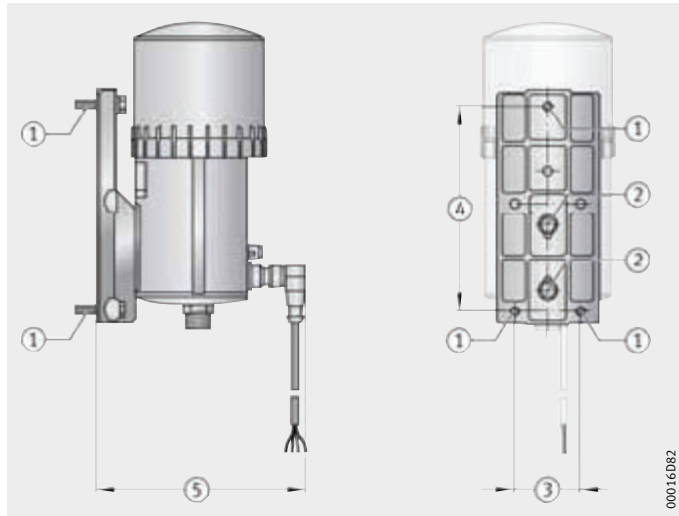
If the lubricator cannot be located directly on the lubrication point, locate the lubricator on the carrier and connect it to the lubrication point using a lubricant feed line:

- Grease the lubrication point and the lubricant feed line.
- Screw the holder to the lubrication system, using support washers and hexagon head screws (M6×16). Maximum torque 3 Nm.
- Make holes for the three fixing screws using the drilling template supplied.
- Locate the lubricator and holder to a carrier on the machine, *Figure 8*.
- Screw the connector G1/8 (accessory) into the grease outlet on the lubricator. Maximum torque 2 Nm.
- Connect the lubricator to the lubricant feed line (8×1,5 mm), maximum length, *Figure 6*, page 7.
- Lay the lubricant feed line to the lubrication point, minimum bending radius 40 mm.
- Screw the connector into the lubrication point.
- Connect the lubricant feed line to the connector.

Note

The connector for the lubrication point is not supplied by Schaeffler Technologies AG & Co. KG.

Grease the lubrication point and lubricant feed line with the same lubricant as contained in the LC unit. Observe the maximum tightening torque, the maximum length of the lubricant feed line and the minimum bending radius.



① Hexagon head screws M6×25 for wall mounting on metal
② Hexagon head screws M6×16 for lubricator and holder
③ Spacing 45 mm, horizontal
④ Spacing 141,5 mm, vertical
⑤ Spacing 143 mm, from carrier

Figure 8
Location

Fitting the connection cable

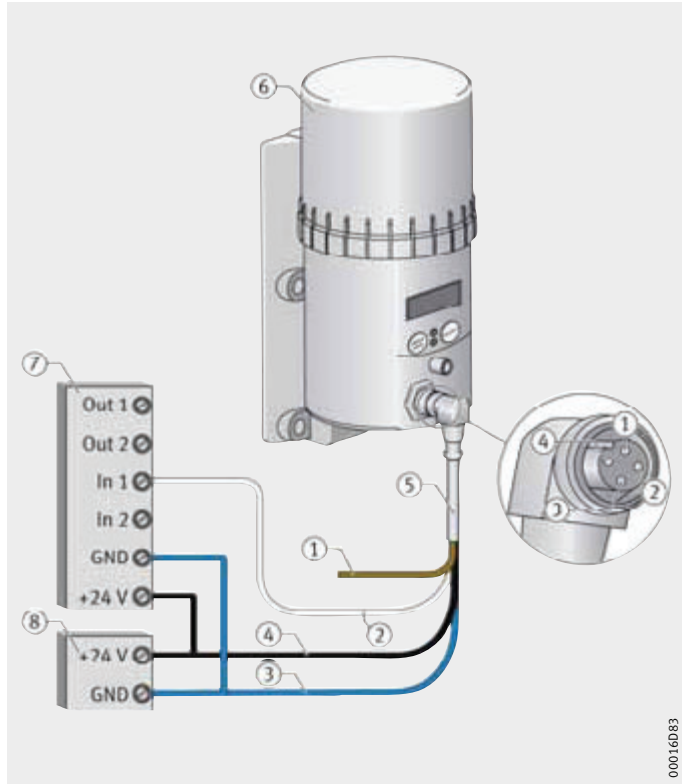
After mechanical mounting, the lubricator is connected to the controller of the machine (for example PLC) by means of a connection cable:

- Connect the connection cable to the controller, observing the pin assignment, *Figure 9*.
- Insert the plug of the connection cable into the socket on the lubricator and screw tight.

Warning

Do not work on live parts of the electrical device. Sparking and fire risk due to short circuit. Electrical connections must only be made by skilled personnel.

An incorrect connection can lead to destruction of the circuit board.



① Brown – not assigned
② White – fault (low-active, negative logic)
③ Blue – earth
④ Black – live (15 V DC to 30 V DC)
⑤ Connection cable
⑥ Lubricator
⑦ PLC
⑧ Power pack

Figure 9
Connection example

Teach-In

After mounting, the greasing period is determined and the lubricator is then set. It is only at this stage that the lubricator is supplied with voltage and initial greasing carried out. The lubricator is thus ready for operation.

Before initial operation, ensure that the lubricator is not damaged.

Caution

Ensure that the lubricator and, where necessary, the connectors and lubricant feed line are correctly fitted and that the connection cable is free of voltage.

Determining the greasing period

The greasing period depends on the lubricant quantity required at the lubrication point.

Determine the greasing period according to the table or use the software FAG Motion Guard SELECT MANAGER, www.schaeffler-iam.com

Greasing period

Mean lubricant quantity in cm^3, stated in each case for 100 hours of operation for the relevant LC unit

Greasing period	LC250 (250 cm^3)			LC500 (500 cm^3)		
	Days	Weeks	Months	Days	Weeks	Months
1	1 041,7	148,8	34,3	2 083,3	297,6	68,5
2	520,8	74,4	17,1	1 041,7	148,8	34,3
3	347,2	49,6	11,4	694,4	99,2	22,8
4	260,4	37,2	8,6	520,8	74,4	17,1
5	208,3	29,8	6,9	416,7	59,5	13,7
6	173,6	24,8	5,7	347,2	49,6	11,4
7	148,8	21,3	4,9	297,6	42,5	9,8
8	130,2	18,6	4,3	260,4	37,2	8,6
9	115,7	16,5	3,8	231,5	33,1	7,6
10	104,2	14,9	3,4	208,3	29,8	6,9
11	94,7	13,5	3,1	189,4	27,1	6,2
12	86,6	12,4	2,9	173,6	24,8	5,7
13	80,1	11,4	2,6	160,3	22,9	5,3
14	74,4	10,6	2,4	148,8	21,3	4,9
15	69,4	9,9	2,3	138,9	19,8	4,6
16	65,1	9,3	2,1	130,2	18,6	4,3
17	61,3	8,8	2	122,5	17,5	4
18	57,9	8,3	1,9	115,7	16,5	3,8
19	54,8	7,8	1,8	109,6	15,7	3,6
20	52,1	7,4	1,7	104,2	14,9	3,4
21	49,6	7,1	1,6	99,2	14,2	3,3
22	47,3	6,8	1,6	94,7	13,5	3,1
23	45,3	6,5	1,5	90,6	12,9	3
24	43,4	6,2	1,4	86,8	12,4	2,8
25	41,7	–	–	83,3	–	–
26	40,1	–	–	80,1	–	–
27	38,6	–	–	77,2	–	–
28	37,2	–	–	74,4	–	–
29	35,9	–	–	71,8	–	–
30	34,7	–	–	69,4	–	–

Example

The machine manufacturer indicates that greasing should be carried out using 15 cm^3 per 100 hours of operation.

LC250

For a greasing period of 9 weeks, the column Weeks gives a value of 16,5 cm^3. This value is the lowest value above 15 cm^3. If greasing is set on the lubricator, enter 9 weeks in the configuration process.

For 10 weeks, the grease quantity is 14,9 cm^3. Since the variation from 15 cm^3 is less than 1%, ask the machine manufacturer whether this setting can be used for greasing.

LC500

For a greasing period of 19 weeks, the column Weeks gives a value of 15,7 cm^3. This value is the lowest value above 15 cm^3. If greasing is set on the lubricator, enter 19 weeks in the configuration process.

For 20 weeks, the grease quantity is 14,9 cm^3. Since the variation from 15 cm^3 is less than 1%, ask the machine manufacturer whether this setting can be used for greasing.

Greasing

Greasing can be initiated by the connected controller (pulse operation) or by the lubricator.

In both cases, the lubricator is connected to the machine controller via the connection cable and indicates whether it is working correctly or an error is present.

Greasing volume

The grease volume dispensed by the device in one lubrication pulse is always 0,5 cm^3. If a larger grease quantity is to be provided, the device carries out several lubrication pulses.

Minimum switch-off period

The shortest switch-off period between two lubrication pulses is:

- 20 seconds (pulse operation)
- 30 seconds (setting of greasing directly on the lubricator).

Caution

If the waiting period between one lubrication pulse and the following lubrication pulse is not long enough, the pressure in the lubrication system can rise above the permissible pressure.

In pulse operation, ensure that the waiting period is not less than the minimum switch-off period of 20 seconds.

Configuration

In the configuration process, it is defined whether the lubricator will work using pulse operation, *Figure 11*, page 14 or the greasing period will be set directly on the lubricator, *Figure 12*, page 15. The lubricator is configured using the keys MODE SAVE and SELECT, *Figure 10*.

MODE SAVE

After switching on, the configuration menu is activated by pressing the key MODE SAVE (t > 4 s). When working in the configuration menu, the response depends on how long the key is pressed for, *Figure 10*.

Short press, shorter than 4 seconds:

- Select this configuration item.

Long press, longer than 4 seconds:

- Store values, go to next configuration item.

SELECT

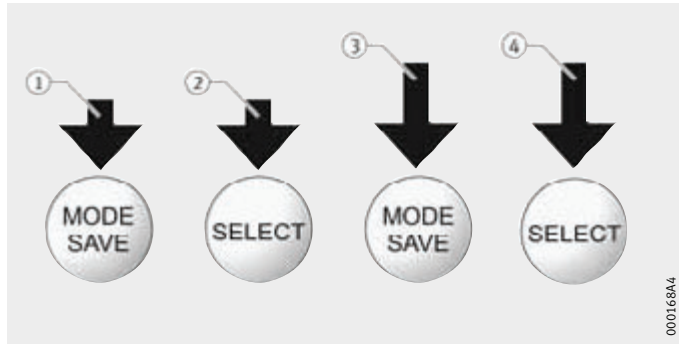
In the configuration menu, the response depends on how long the key is pressed for, *Figure 10*.

Short press, shorter than 4 seconds:

- Change value.

Long press, longer than 4 seconds:

- Do not store values, return to previous configuration item.



① t < 4 s: Selection
② t < 4 s: Change values
③ t > 4 s: Jump to next item, store values
④ t > 4 s: Back to previous item, delete last change

Figure 10
Keys

Time limit

If a key is not pressed for 3 minutes during configuration, the configuration mode is terminated. Any changes made up to this point are implemented.

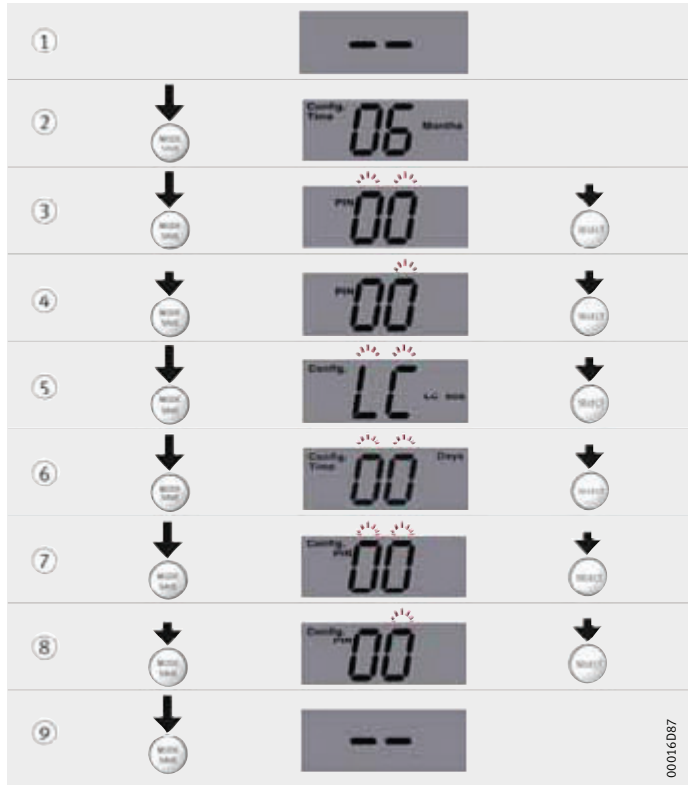
Setting pulse operation

If greasing is to be initiated by the controller, switch the lubricator to pulse operation.

Pulse operation is set on the lubricator. The display is fed by the internal battery, the connection cable must be free from voltage.

Perform all steps according to *Figure 11*:

- ②: PIN reset to 00 by the following key combination: 2x MODE SAVE › 2x SELECT › MODE SAVE. The display disappears briefly and then reappears.
- ⑥: Set 00 days here.



① Lubricator switched off
② Display of time setting and PIN reset
③ PIN entry, first digit
④ PIN entry, second digit
⑤ Select LC unit volume
⑥ Set 00 days here
⑦ Change PIN, first digit (for initial configuration or following PIN reset only)
⑧ Change PIN, second digit (for initial configuration or following PIN reset only)
⑨ Configuration complete

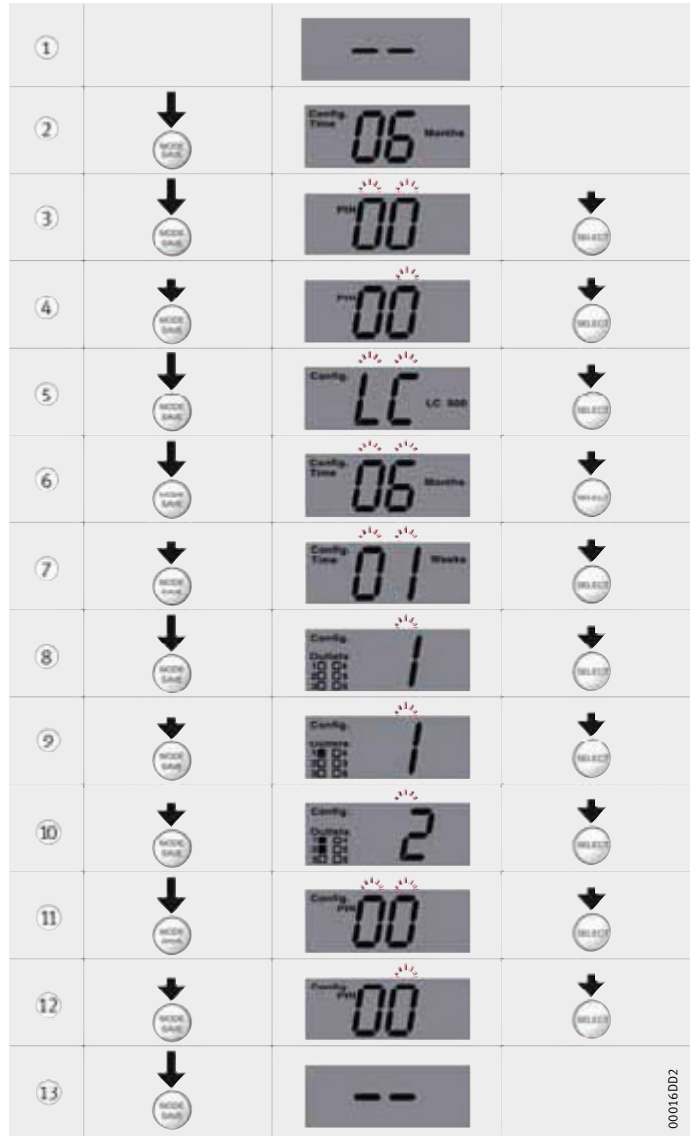
Figure 11
Setting pulse operation

Setting greasing on the lubricator

The greasing period is set using two keys on the lubricator.
The display is fed by the internal battery, the connection cable must be free from voltage.

Perform all steps according to *Figure 12*:

- ②: PIN reset to 00 by the following key combination:
  2x MODE SAVE › 2x SELECT › MODE SAVE.
  The display disappears briefly and then reappears.
- ⑥: Set the greasing period, see table Greasing period, page 11.
- ⑧, ⑨ and ⑩: These settings are only effective when the distributor is connected, see BA 12, FAG Motion Guard C6-MP-DISTRIBUTOR.



① Lubricator switched off
② Display of time setting and PIN reset
③ PIN entry, first digit
④ PIN entry, second digit
⑤ Select LC unit volume
⑥ Set month, weeks or days
⑦ Change to days or weeks
⑧ Set outputs
⑨ Activate outlet 1
⑩ Activate outlet 2
⑪ Change PIN, first digit (for initial configuration or following PIN reset only)
⑫ Change PIN, second digit (for initial configuration or following PIN reset only)
⑬ Configuration complete

Figure 12
Configuration menu

Switching on the lubricator

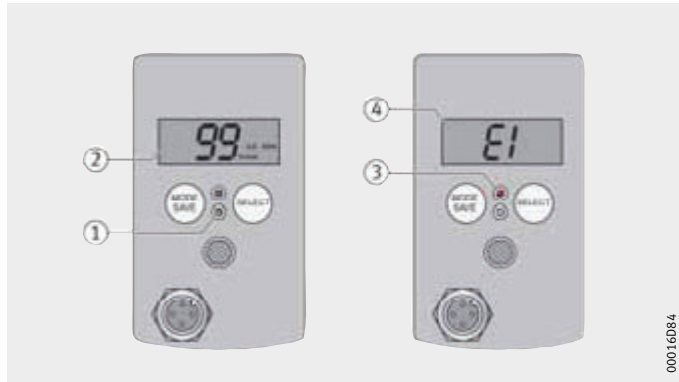
The controller switches on the lubricator.

Carry out the first four steps only when using pulse operation:

- Apply voltage, 15 V to 30 V.
- Wait at least 1 minute (at least 14 minutes if the distributor is connected).
- Detach from the voltage supply.
- Wait at least 20 seconds.

When setting greasing on the lubricator, only carry out the following three steps, when using pulse operation carry out these steps as well:

- Apply voltage, 15 V to 30 V.
- Initiate additional greasing, see page 18.
- Check whether the lubricator is giving the signal “high”, the green LED on the lubricator is lit or flashing and the residual volume is displayed, *Figure 13*. If the red LED is lit or flashing, there is an error, see page 22.



① Green LED
② Residual volume
③ Red LED
④ Error code

Figure 13
Lubricator, switched on

At initial operation, the pump system in the drive unit is filled with approx. 5 cm^3 universal grease. After approximately ten lubrication pulses, the pump system will be filled with grease from the LC unit. If universal grease is not suitable for the lubrication point, initiate a lubrication pulse ten times before initial operation and dispose of the universal grease.

Operation

Check the lubricator regularly during operation and, if necessary, initiate additional greasing.

Switching on

The controller of the machine switches on the lubricator:

- Apply voltage, 15 V to 30 V.
- Check whether the lubricator is giving the signal “high”.

Switching off

The controller of the machine switches off the lubricator:

- Switch off the lubricator so that it is free of voltage.
- Check whether the lubricator is giving the signal “low”.

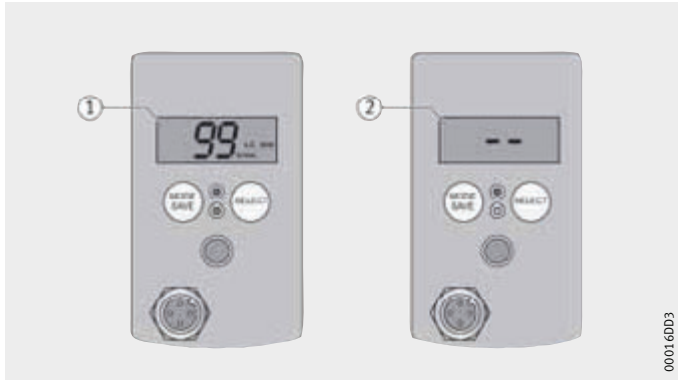
After switching off, all the settings are saved. After switching on, greasing will be continued at the point where it was stopped.

Display

The display shows whether the lubricator is switched on or off, *Figure 14*.

If the lubricator is switched on, the display shows:

- settings and operating mode or error messages.



① Switched on
② Switched off

Figure 14
Operating mode

LED

There are two LEDs on the front of the lubricator.

Description

LED	Signal	Description
Green	Flashing	No error
Green	Continuously lit	Greasing
Red	Flashing	Error
Green and red	Flashing	Replace LC unit immediately

Inspection

Check the following regularly:

- the integrity and condition of the lubricator, connectors and feed lines
- the residual volume of lubricant
- the position and secure location of all components.

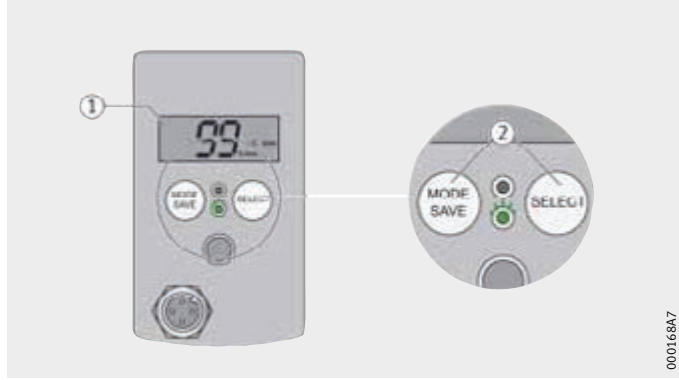
Additional greasing

If the supply voltage is connected to the lubricator, additional greasing can be initiated manually.

For each additional greasing operation, a greasing pulse is initiated and the lubrication point is greased with 0,5 cm^3 of lubricant:

- Check whether the green LED is continuously lit.
  No additional greasing is possible at this time.
- If the green LED is flashing, additional greasing is possible.
  In order to initiate this, press both keys simultaneously for at least 4 seconds, *Figure 15*.

In most cases, additional greasing is initiated immediately. One exception is when the lubricator initiates several lubrication pulses almost immediately after one another. If both keys are pressed simultaneously for at least 4 seconds during a greasing pause, this is stored by the lubricator. At the end of the pause, an additional lubrication pulse is then initiated as often as was activated, but no more than five times.



① Lubricator switched on
② Press both keys simultaneously

Figure 15
Additional greasing

Remaining running time

After additional greasing or extended machine downtime (weekends, plant shutdowns), recalculate the remaining running time, see page 20. This can be carried out using the software FAG Motion Guard Select Manager, www.schaeffler-iam.de

Additional greasing is only possible at an ambient temperature of more than 0 °C. The remaining running time, which has been shortened as a result of the additional greasing, must be taken into consideration in the lubrication and maintenance plan.

Conversion

The lubricator can be converted from 250 cm^3 to 500 cm^3 or vice versa. The drive unit itself is identical for both sizes. The two sizes differ only in terms of the cover and the LC unit, see table, page 24.

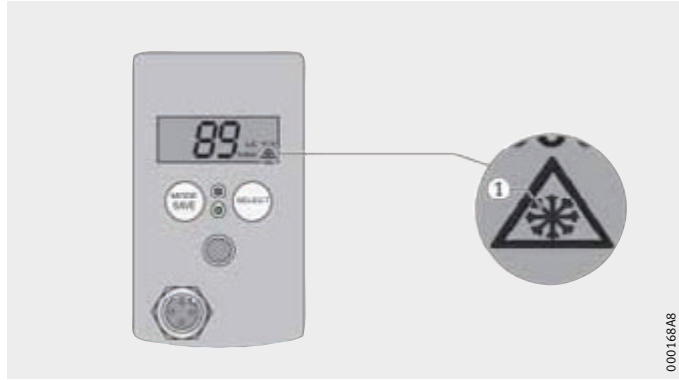
After conversion, reconfigure the lubricator and indicate the new volume.

Low-temperature deactivation

If the temperature falls to a value between 0 °C and –19 °C, the ice crystal symbol will flash, *Figure 16*.

Note

Additional greasing is not possible below 0 °C.



① Flashing ice crystal indicates 0 °C to –19 °C

Figure 16
Low-temperature display

If the temperature falls below –20 °C, the lubricator switches itself off. The ice crystal symbol appears permanently, the remaining quantity is still displayed.

The lubrication point is not greased below –20 °C.
Damage may occur if appropriate measures are not taken.

Reactivation

The lubricator switches itself back on automatically as soon as the temperature rises above –20 °C.

Remaining running time

After additional greasing or extended downtime, determine or calculate the remaining running time and enter this in the maintenance plan.

Determination of remaining running time

The greasing period is set to 8 months. The machine is temporarily shut down after 2 months, the display shows a residual quantity of 75%. After 25% of the greasing period, 25% of the grease has been used up, so there is no need to use a formula for calculation here. After putting into operation, record in the maintenance plan that the LC unit is to be replaced 6 months later.

Remaining running time

The remaining running time can be calculated. For pulse operation, calculation is based on the residual quantity and the settings on the controller of the machine.

If greasing is set on the lubricator, the remaining running time can be calculated using the following formula.

$$R_{LZ} = \frac{SZ \cdot RV}{100}$$

R_{LZ} Days, weeks, months, as a function of SZ
Remaining running time

SZ Days, weeks, months
Greasing period, set on the lubricator

RV % vol.
Residual quantity.

Calculation example

The lubrication point is greased each 100 hours with 1,6 cm^3.
The lubricator with LC250 is set to a greasing period of 22 months.

After 11 months and at a residual volume of 48%, the machine and therefore also the lubricator is shut down for several weeks.

Once the machine has been reactivated, when should the LC unit be replaced?

According to the formula, the LC unit must be replaced after 10,56 months. The maintenance plan must therefore be changed to show 10 months and 2 weeks.

$$R_{LZ} = \frac{SZ \cdot RV}{100} = \frac{22 \cdot 48}{100} = \frac{1056}{100} = 10{,}56$$

Changing the LC unit

Replace an empty LC unit immediately. If the LC unit is empty, the lubricator gives the signal “low” to the controller and the red and green LEDs flash simultaneously, *Figure 17*.

Only new, completely filled FAG LC units of the correct size should be used. LC units should only be replaced in a dry environment.

Note

Dispose of old parts in accordance with the applicable regulations.

① Green LED
② Red LED
③ LC unit empty

Figure 17
Changing the LC unit

Changing the LC unit:

- Rotate the cover in an anti-clockwise direction and remove.
- Remove the empty LC unit, the display will show “LC” and the red LED will flash.
- Insert the LC unit into the cover and remove the sealing cap, *Figure 7*, page 8.
- Press the LC unit into the cover until lubricant emerges from the outlet.
- Position the LC unit and cover on the drive so that the catches lock into place and the teeth engage with each other. Rotate the cover in a clockwise direction until the bayonet catch locks into place.
- The controller in the drive unit will automatically recognise that the LC unit has been replaced. The display will show “--” if the device has been switched off or “99%Vol.” if it was switched on before replacement.

When it is switched on, the lubricator will continue working with the existing settings.

Never fit a partially empty LC unit. The fill level of an LC unit is not detected by the device. When an LC unit is fitted, the controller is programmed such that the display always shows “99%Vol.”. If a partially empty LC unit is fitted, the fill level displayed will be incorrect.

Malfunction

Errors are communicated to the controller of the machine via the connection cable and shown on the display. The lubricator will shut itself down until the error has been eliminated and the error message has been cleared.

If the error message E0, E2, E3 or E5 is shown, a distributor is connected, see BA 12, FAG Motion Guard C6-MP-DISTRIBUTOR.

Eliminating the malfunction

If an error is present, the red LED will flash:

- Read off the error code and compare with the table.
- Localise the error.
- Eliminate the error.
- Clear the error message by pressing the key SELECT (t > 4 s).

Error messages

Localise and eliminate possible error sources using the table.

Error, cause, remedy

Code in display	Error	Possible cause	Remedy
E1	Lubricator has been switched off	Pressure too high, leading to excessive motor current, outlet is blocked	Remove the blockage and clear the error by pressing the key SELECT (t > 4 s)
E4	Lubrication system has been switched off	Drive unit is defective	Replace drive unit
LC	Lubrication system does not detect an LC unit	LC unit missing	Fit new LC unit

If the error cannot be eliminated, please contact Customer Service at Schaeffler Technologies AG & Co. KG.

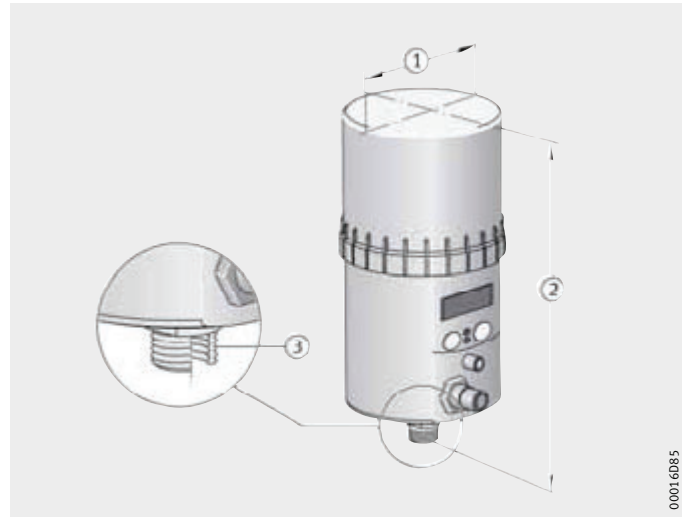
Technical data

Technical data for lubricator: see table.
Accessories: see table, page 24, and *Figure 19*, page 25.

Lubricator

Designation	CONCEPT6 CONTROL 250	CONCEPT6 CONTROL 500
Volume of LC unit	250 cm^3	500 cm^3
Length	210 mm	260 mm
Diameter	92 mm	92 mm
Mass	approx. 1,3 kg	approx. 1,4 kg
Mass including LC unit	approx. 1,5 kg	approx. 1,8 kg
Operating period	1 day to 24 months	
Lubricant quantity per lubrication pulse	0,5 cm^3	
Operating pressure[1)]	max. 25 bar	
Lubricants[1)]	Greases up to consistency class NLGI 2	
Operating temperature	–20 °C to +60 °C	
Power supply	15 V DC to 30 V DC	
Current consumption	120 mA (typical)	
Switching current	max. 1 A for malfunction output	
Connection cable	4 pin, length 5 m or 10 m	
Threaded connector for lubricator	G3/8 external, G1/8 internal	
Diameter of lubricant feed line	8×1,5 mm, inside diameter 5 mm	
Length of lubricant feed line[1)]	max. 5 m	

1) A combination of these maximum values is only possible at temperatures > +20 °C, *Figure 6*, page 7.



① Diameter
② Length
③ Threaded connector for lubricator

Figure 18
Lubricator

Accessories

Accessories: see table and *Figure 19*, page 25.

Components and ordering designation

Component	Ordering designation
LC250 with 250 cm^3 Arcanol MULTITOP	ARCALUB-C6.LC250-MULTITOP
LC250 with 250 cm^3 other lubricant	Available by agreement
LC500 with 500 cm^3 Arcanol MULTITOP	ARCALUB-C6.LC500-MULTITOP
LC500 with 500 cm^3 other lubricant	Available by agreement
Cover for LC250 made from transparent plastic	ARCALUB-C6.CAP-250
Cover for LC250 made from aluminium (for lubricants containing ester)	Available by agreement
Cover for LC500 made from transparent plastic	ARCALUB-C6.CAP-500
Cover for LC500 made from aluminium (for lubricants containing ester)	Available by agreement
Connection cable 5 m	ARCALUB-C6.CABLE-CONTROL-5M
Connection cable 10 m	ARCALUB-C6.CABLE-CONTROL-10M
Holder	ARCALUB-C6.HOLDER
Straight connector G1/8, 6 pieces, including closing plug, 4 pieces	ARCALUB-C6.JOINT-MP-0-SET
Angled connector G1/8, 6 pieces, including closing plug, 4 pieces	ARCALUB-C6.JOINT-MP-90-SET
Reduction nipple	ARCALUB-C6.NIPPLE-G3/8-G1/4
Lubricant feed line 5 m, 8×1,5 mm, inside diameter 5 mm	ARCALUB-C6.TUBE-5M
Grease cartridge (400 g) for prelubrication: ▪ filled with Arcanol MULTITOP ▪ filled with other lubricant	 ARCANOL-MULTITOP-400G Available by agreement

Caution Only FAG original accessories should be used.

① LC250
② LC500
③ Cover for LC250
④ Cover for LC500
⑤ Connection cable: 5 m, 10 m
⑥ Holder, drilling template, screws
⑦ Connector, straight
⑧ Connector, elbow
⑨ Reduction nipple
⑩ Lubricant feed line
⑪ Grease cartridge

Figure 19
Accessories

Service

Empty lubricators can be sent to Schaeffler Technologies AG & Co. KG for:

- disposal of used parts in an environmentally-friendly manner
- replacement of the LC unit
- setting of the required lubricant quantity.

EU Declaration of Conformity

Declaration of Conformity for lubricator FAG Motion Guard CONCEPT6-CONTROL.

LUK INA FAG

EU Declaration of Conformity

In accordance with EG Machinery Directive 2006/42/CE
and EMC Directive 2004/108/CE

We hereby declare that the product described below is in conformity with the applicable health and requirements of the EU Directive in terms of its design and type and in the execution we have brought into circulation.
This declaration shall cease to be valid if any modification is made to the product without our agreement.

Product description:	Automatic lubricator
Product name:	FAG Motion Guard CONCEPT6-CONTROL
Type:	LC250 and LC500

Applicable harmonised standards:

EN ISO 12100-1:2003	Safety of machinery – Basic concepts, general principles for design – Part 1: Basic terminology and methodology
EN ISO 12100-2:2003	Safety of machinery – Basic concepts, general principles for design – Part 2: Technical principles
EN 60204-1:2006	Electrical equipment of machines

Signatures:

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GmbH & Co. KG
Services Industrial Aftermarket, FIS
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D-97421 Schweinfurt

i.V. A. Kembes
Dipl. Ing. Armin Kembes
Vice President Services Industrial Aftermarket
Schaeffler Group Industrial

i.A. Michael Fassbinder
Michael Fassbinder
Product Manager
FIS Lubrication Products

Date:
Schweinfurt, 16.03.2010

The declaration certifies conformity with the stated directives but does not represent a guarantee of characteristics.
The safety guidelines in the user manual must be observed.

Schaeffler Technologies GmbH & Co. KG • Georg-Schäfer Straße 30 • D-97421 Schweinfurt • Tel. +49(0)9721 91-0

00018012

Figure 20
Declaration of Conformity

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